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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,588	07/23/2003	Takeshi Kusudou	240433US0	7528

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EXAMINER

WU, IVES J

ART UNIT PAPER NUMBER

1713

DATE MAILED: 07/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/624,588

Applicant(s)

KUSUDOU ET AL.

Examiner

Ives Wu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 9-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-14 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Election/Restrictions***

Applicant's election with traverse of Group I in the reply filed on June 30, 2005 is acknowledged. The traversal is on the ground(s) that evidence of patentable distinction between Group I and Group II is not provided. According to MPEP 803 Guidelines:

Examiners must provide reasons and/or examples to support conclusions, but need not cite documents to support the restriction requirement in most cases.

Furthermore, this is not found persuasive for the following reason: the intermediate product of Group I will lose its identity/feature in the final product of Group II due to the new combination.

The requirement is still deemed proper and is therefore made FINAL.

A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144). See MPEP § 821.01.

***Claim Rejections - 35 USC § 102/103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yoshida (US20040157078A1).

As to degree of acetalization of polyvinyl acetal from 45 to 80 mol % in **independent claim 1**, Yoshida discloses as cited: When acetal group is considered as two hydroxyl groups acetalized, a degree of acetalization is preferably **60 mole % or more**, [0034], line 3-5.

As to the degree of polymerization of polyvinyl alcohol from 30 to 1000 in **independent claim 1**, Yoshida discloses as cited: Preferably, the polyvinyl acetals of from the first to the third inventions have a polymerization degree of **50 to 3500**, [0034], line 1-3.

As to the degree of hydrolysis from 80.0 to 99.99 mol% in **independent claim 1**, Yoshida discloses as cited: an amount of residual acetyl groups is preferably **3 to 10 mole %**, [0034], line 5-6; Then, the hydrolysis of polyvinyl acetal is calculated as **90 – 97 mol%**.

As to the terminal ionic group via a sulfide bond in **independent claim 1**, Yoshida discloses as cited: A method of introducing the functional group, preferably the ionic group, into a main chain is not specifically limited. For example, there is given a method of synthesizing PVA by saponification after radical polymerizing vinyl acetate in the presence of compound having the above functional group and at least one mercapto group in a molecule. Further specifically, for example, to introduce hydroxyl group into the ends, a compound like mercaptoethanol or mercaptopropanol may be used, and to introduce carboxyl group into the ends, a compound like mercaptopropion acid may be

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used. In addition, to introduce mercapto group into the ends, two or more mercaptanes may be used, [0066], line 1-16. mercaptoprion acid is formulated as sulfide bond with carboxylic acid. Sulfido group is  $-S-(CH_2)_n-$ .

As to satisfy requirements of formula (1) in **independent claim 1**, the polyvinyl acetal prepared by Yoshida is substantially identical to the claimed polyvinyl acetal as discussed above. In view of the identity/similarity in the polyvinyl acetal between the prior art and the present invention, it is examiner's position to believe that the prior art polyvinyl alcohol must inherently satisfy the formula (1). Since the PTO does not have proper means to conduct experiments, the burden of proof is now shifted to the applicant to establish the difference; In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

As to satisfy formula (2) which is relationship between mole content of 1,2 glycol in polyvinyl alcohol and ionic group mole content in polyvinyl alcohol in **dependent claim 2**, Yoshida discloses glycol as cited: When acetal group is considered as **two hydroxyl groups** acetalized, a degree of acetalization is preferably 60 mol% or more, [0034], line 3-5; because the substantially identical polyvinyl acetal disclosed between Yoshida and applicant, it is examiner's position to believe that the prior art polyvinyl alcohol must inherently satisfy the formula (2). Since the PTO does not have proper means to conduct experiments, the burden of proof is now shifted to the applicant to establish the difference; In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

As to limitation of **dependent claim 3**, Yoshida discloses as cited: The above-mentioned functional group is not particularly limited as long as it improves the

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dispersibility of a dispersion matter like a pigment, and functional groups as such **carboxyl group**, sulfonyl group, [0048], line 1-5.

As to limitation of **dependent claim 4**, Yoshida discloses as cited in the Example 2: 176.0 g of n-butyl aldehyde was added to the solution in part (which reacts with polyvinyl alcohol to generate polyvinyl butyral), a degree of acetalization (butyralization) was 71.3 mole% [0143].

As to the use of polyvinyl acetal as binder of ceramic molding in **dependent claim 5**, Yoshida discloses as cited: Polyvinyl acetals is also used as a binder of a ceramic green sheet, [0013], line 1-2; The eighth invention is the slurry for the ceramic green sheet, which contains the polyvinyl acetals of from the first to the third inventions, ceramic powder, a plasticizer and a solvent, [0087].

As to limitation of **dependent claim 6**, Yoshida discloses as cited: The ceramic green sheet can be prepared by deaerating the slurry for a ceramic green sheet of the eighth invention as required, then applying the slurry to the surface of a supporting element such as a polyester film or a steel plate from which the adhesive is removable, and removing the organic solvent through heating and drying. Such a ceramic green sheet is also a part of the present invention, [0097].

As to the use of polyvinyl acetals as binder of ink and paint in **dependent claim 7**, Yoshida discloses as cited: The fourth invention is ink, where the polyvinyl acetals of from the first to the third inventions are used as binders, [0070].

As to the content of polyvinyl acetals in the ink or paint from 1 to 35 % by weight in **dependent claim 8**, Yoshida discloses as cited: The amount of the polyvinyl acetal to be blended in the ink of the fourth invention is preferably **5 to 25 wt%**, [0073], line 1-3.

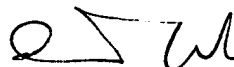
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ives Wu whose telephone number is 571-272-1114. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner: Ives Wu  
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DAVID W. WU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 171

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